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A STUDY OF PRICES AND QUALITY OF CREAMERY BUTTER.

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IMPORTANCE OF ACCURATE WHOLESALE PRICE QUOTATIONS.

The majority of American creameries sell their butter on the basis of some recognized market quotation which, it is supposed, represents the prevailing wholesale market value of a certain grade of butter within the market where the quotation is issued.¹ The primary wholesale market receivers of creamery butter usually have standing agreements both with the creameries from which they obtain their supplies and with the jobbers and retailers to whom they sell, whereby the current prices for different grades of goods are dependent upon either weekly or daily market quotations. Thus, it is a matter of considerable importance to consumers as well as to producers that the various wholesale price quotations in different markets should reflect accurately the actual current values of different grades of butter.

METHOD AND SCOPE OF INVESTIGATION.

In order to determine the relationship of certain market quotations to the basic wholesale prices of creamery butter and to find out to what extent improvement in the quality of butter helps the creamery

¹ For a detailed description of the methods by which current market quotations are issued, see Department Bulletin 456, "Marketing Creamery Butter," by Potts, Roy C., and Meyer, H. F.

to obtain higher market returns, the Department of Agriculture made investigation of the sources of butter supply of various cities of the United States, the prevailing grade or quality of butter sold in different markets, and the prices paid for different grades. The investigations were begun in the spring of 1914 and continued until the fall of 1915. During that time over 1,000 creameries in all sections of the United States were visited by representatives of the department. The grade of butter they produced was determined, and additional information was obtained relative to their market outlets, the methods by which their outputs were marketed, and the prices obtained for various lots of different grades of butter shipped to different merchants within the same and different markets.

The sources of supply, the quality of butter demanded by different classes of trade, and the methods of market distribution were studied in more than 50 of the largest cities in every part of the United States. Various representatives of the department were engaged in this work, but all comparisons of quality between different creameries and different markets were based on the scorings of a single expert judge in the commercial grading of creamery butter.¹

WHOLESALE QUOTATIONS ON WHICH CREAMERY BUTTER PRICES ARE BASED.

Creamery butter, which is properly made from a good grade of cream, will retain its desirable qualities for a sufficient time to permit it to be marketed at any season in practically any domestic or foreign market. Refrigeration and transportation facilities in the United States are such that it is possible to ship butter to practically every city in the country. Creamery men, however, like factory managers in other industries, generally have sought to sell their product in local markets as much as possible. Numerous cities in New England offer the best market outlets for the creameries in that section of the country. Likewise, the creameries of New York, and of Pennsylvania, as well as those of most of the Southern and Western States, have found satisfactory market outlets in the same regions in which they are located.

The production of creameries located in some sections of the country, particularly the North Central States, is greatly out of proportion to the local market demands of those regions. The great majority of creameries in that territory are located in rural districts where they have practically no local trade to supply, nor are there any neigh-

¹ This investigation was made with the assistance of the Dairy Division, Bureau of Animal Industry, U. S. Department of Agriculture. Mr. M. P. A. Sondergaard, dairy manufacturing specialist of that bureau, inspected and scored the various lots of butter on which he was able to obtain first-hand knowledge regarding both buying and selling prices.

boring cities which are not being adequately supplied by creameries situated in the same sections. Creameries thus situated are obliged to ship their product to large centers of population in the Eastern States or to some important storage and distributing center. New York, Chicago, and San Francisco are the most important market centers of this kind. Even those creameries which sell a large portion of their output in the cities in which they are located are obliged to find other market outlets where the local production is insufficient for the current trade demands. Boston is such an outlet for some of the large centralizing creameries of the Middle West. The accompanying map, figure 1, shows the location of the most important wholesale butter markets in relation to the general geographical location of a total of more than 4,000 creameries in the United States.

IMPORTANT BASIC WHOLESALE BUTTER MARKETS.

In the beginning of the creamery-butter industry of this country, the town of Elgin, Ill., was the center of the butter-producing region of the Middle West; and it was the place where representatives of butter merchants in eastern markets made offers for the product of the creameries in that section of the country. The prices at which goods were sold on the Elgin Board of Trade were published, and the quotations thus issued came to be regarded as the basic wholesale price of the American butter market. This was because most of the creameries in this region did not have local market outlets and therefore the major portion of "Elgin butter" was available for distribution in every city that had satisfactory transportation service and market connections with these creameries. As transportation and refrigeration facilities were improved, the creameries in the Elgin territory were able to compete for the markets of every important city in the country; and creameries in every part of the country sold butter at prices which were in line with the Elgin quotations.

Until recently¹ the custom of basing the buying and selling prices of creamery butter on the Elgin quotations still prevailed in many sections of the country, though the demands for market milk in Chicago and other neighboring centers of urban population had reduced the butter production in the "Elgin District" so that comparatively small quantities of butter were sold on the Elgin (butter) Board.

Chicago has become the leading market center for creamery butter produced in the Middle Western States, because, besides being a large consuming center, it has exceptionally good shipping and storage facilities. Many creameries and jobbers in that market

¹ By action of the United States Food Administration the Elgin Board of Trade on October 31, 1917, suspended the issuance of butter quotations.

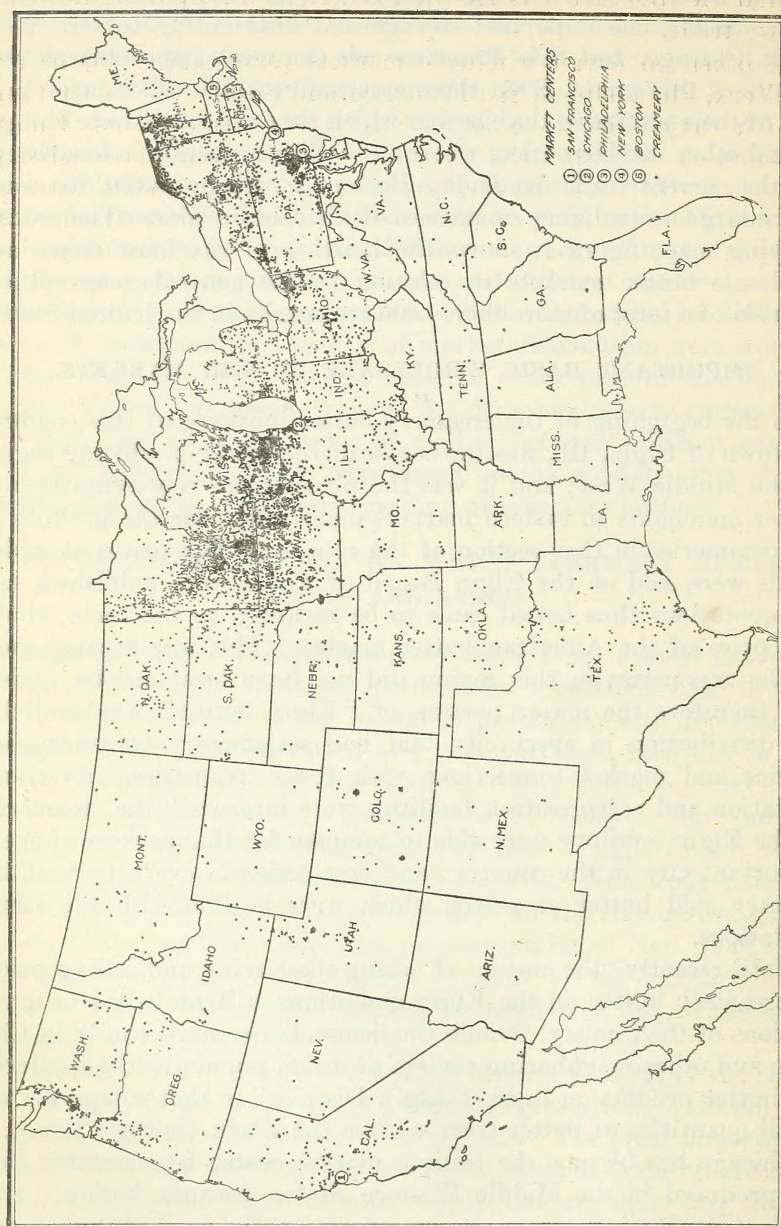


FIG. 1.—Showing location of creameries and important butter market centers of the United States.

territory are now basing their price agreements upon the Chicago quotations, because of the immense volume of daily receipts in that city and the fact that it is the chief center for reshipments to "out-of-town trade."

The other important wholesale markets for creamery butter are New York, Philadelphia, San Francisco, and Boston. The quotations issued in those cities serve not only as bases for settlements of market transactions within the territory supplied from these jobbing centers, but they are also the bases for price agreements between wholesale receivers and the creameries which ship to them. Although many of the creameries in the New England States no longer sell a large portion of their output to wholesale butter merchants in Boston, the custom of basing their selling prices on the Boston quotations still prevails.

RELATION OF WHOLESALE PRICE QUOTATIONS TO STANDARDS AND GRADES.

QUALITY STANDARDS.

To permit comparisons of market prices in different cities and to facilitate trading between different sections of the country, the various wholesale trade organizations in the chief wholesale butter markets of the United States have adopted grades and standards for butter. In wholesale market transactions butter generally is classified as "Creamery," "Dairy," "Ladles," and "Process," according to the method of manufacture; and "the trade" also recognizes different "grades" of creamery butter, such as "Higher scoring lots," "Extras," "Extra Firsts," "Firsts," and "Seconds," according to differences in the quality of various lots. The lack of uniform standards for the various "official grades" applying to certain wholesale market transactions is shown in Table 1.

Figure 2 presents a comparison of the average monthly wholesale price quotations for Extras in Boston, New York, Philadelphia, Chicago, Elgin, and San Francisco. It is evident that the prices, in the areas where production exceeds local consumption, differ from the prices in eastern market centers by approximately the costs of transportation. The experience of creamery men, however, has shown that the trade demands of different cities vary to such an extent that the standards of quality in the different markets are not actually the same, even when the accepted standards of different trade organizations, as shown in Table 1, are ostensibly alike. Hence the current market reports are not exact guides as to the prevailing wholesale prices of like grades of butter in different cities.

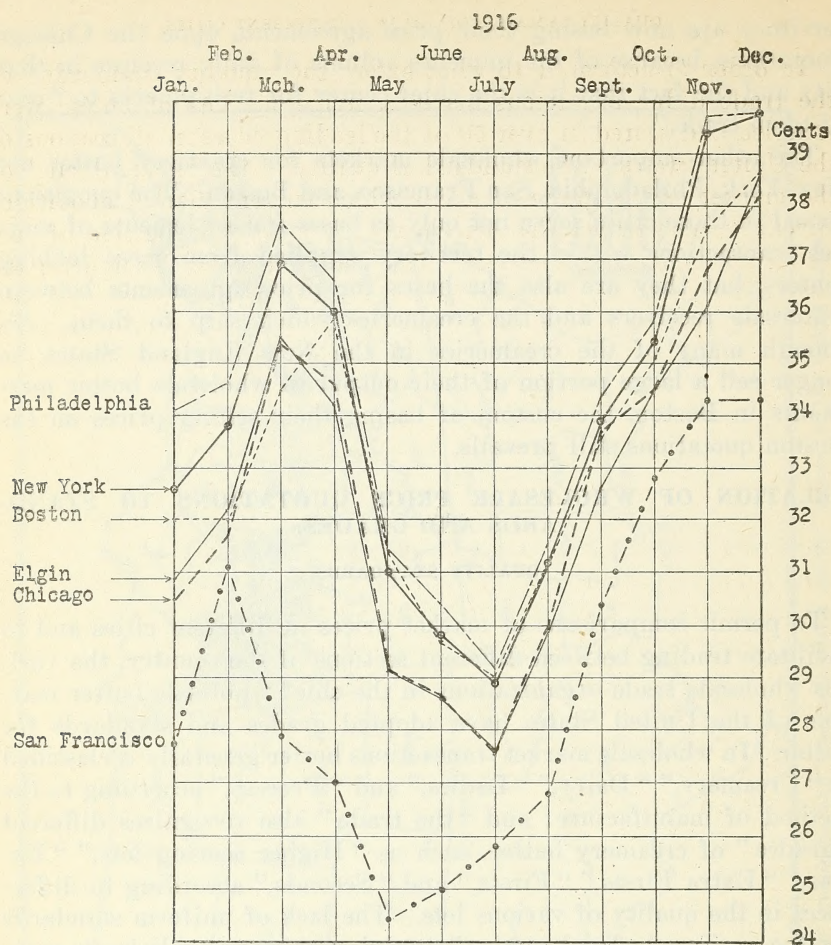


FIG. 2.—Average monthly quotations for extras in important wholesale butter markets.

TABLE 1.—Comparison of the official creamery butter grades of different wholesale trade organizations.

Grade.	Scores required for different grades.*					
	Boston.	Chicago.	Elgin.	New York. ¹	Philadel- phia.	San Fran- cisco.
Specials.....				93+		
Extras.....	93+	93+	93+	92	91+	93+
Extra first.....		91-92			90	² 90-92
Firsts.....	87-92	87-91		88-91	87-89	87-89
Seconds.....	80-86	80-90		83-87	80-88	80-89
Thirds.....	75-85	75-89		76-82	75-89	70-76

* The plus sign (+) indicates that higher scores are included.

¹ At the discretion of a "Butter Committee" the scores required for various grades in the New York market are subject to change.

² Prime firsts.

QUALITY DEMANDS OF TRADE IN DIFFERENT CITIES.

In order to determine to what extent the "quality standards" of the trade differ in various markets, numerous lots of butter were sampled and scored in over 50 of the leading cities in all sections of the United States. The standard of quality of the "general run" of the market or the grade of goods which current market quotations generally represented was determined by a daily inspection of current arrivals in the storerooms of the wholesale trade. In figuring the average or the prevailing standard for any market, the scores of only such lots as were acceptable to the higher class of grocery trade in those cities were included. To check the inspections in the wholesale market, a number of sales were followed through to the consumer. The results of these studies of the comparative quality standards of the trade in the various important market centers of the United States showed differences of two or three points between the prevailing grades or the standards of the most discriminating eastern markets and those of certain western and southern cities.

In Table 2 the average scores of more than 150 different lots distributed among the retail trade of New York, Philadelphia, Chicago, St. Paul, and Minneapolis are shown. The first column is the average score of the representative lots of all butter sold to all classes of trade, and such scores are indicative of the "general run" of the market at that season of the year. The second column shows the average of lots sold only to the most select grocery trade, and such scores indicate the comparative standards for so-called "Extras" in those markets.

TABLE 2.—Average scores for lots of creamery butter sold to all classes of trade and to select trade.

[Based on scorings in winter months, 1914-15.]

Market.	All classes of trade.	Select trade.
New York.....	90.2	91.1
Philadelphia.....	90.8	91.8
Chicago.....	89.2	90.2
St. Paul and Minneapolis.....	89.1	89.6

The comparisons of the prevailing standards of the trade in the cities named above are based on the scorings of a single expert butter judge. This eliminates differences of personal tastes and makes the results of the work fairly comparable.

Although there is difference of opinion with regard to the comparative quality standards of different markets, the experience of most creameries has demonstrated the fact that the quality demands of the trade are different in different cities. Thus the majority of

the country creameries of Minnesota have found that their shipments to Philadelphia and New York generally bring the highest net market returns. On the other hand, a large number of Iowa and Wisconsin creameries have found that their net price returns are usually the highest in the Chicago market. The tastes of different buyers vary, and, in the absence of uniform standards of quality, the wholesale price quotations of various market centers are not entirely reliable as guides for determining the most profitable market outlet for the output of any particular creamery. The only way in which a creamery man can determine the market in which his particular "make" of goods will net the highest market return is by the experiment of "splitting shipments" between different markets. It is through such trial shipments that most country creameries have selected their established market outlets.

SEASONAL CHANGES IN MARKET STANDARDS.

It is a well-recognized fact that the quality of output of most creameries varies with the season of the year. If the market standard were constant and inflexible, a large portion of the daily arrival during the spring season would grade as Extras, but the market standards are flexible and change somewhat in accordance with the quality of the general run of the current market receipts. According to the rules and regulations of the New York Mercantile Exchange, Extras may score 91, 92, or 93, according to variations in the quality of current receipts at different seasons of the year. The exact standard which is to prevail from time to time is determined by a committee of the exchange. None of the trade organizations of other cities has adopted this "seasonal sliding scale of standards"; nominally they adhere to a constant standard requiring a score of either 91 or 93 for Extras. (See Table 1.) A comparison of the average scores of lots which were representative of goods regularly accepted as Extras in both Chicago and New York showed, however, that the actual standards of the trade in both of those markets varied with the season of the year. In the winter of 1914-15, according to the scorings of current market receipts, the Chicago standard was approximately one point lower than the New York standard, although the nominal standard of the Chicago market was 93, as compared with a 92 standard in New York.

The difficulty of comparing Chicago quotations with those of New York is further increased by the fact that at certain seasons its trade demands change so that its standards are then practically the same as those of the New York market. The reason for this is that during the season of surplus production of creamery butter the demands of storage operators dominate the market situation. Many creameries in Minnesota which regularly ship to the New York market consign

large quantities to Chicago each year during the storage season. They have found that on account of the demand for storage operations, the requirements of the Chicago market at that season of the year are equally as discriminative as those of New York. Since at this time the prevailing prices of butter are determined largely by the demands of those buying for storage purposes, the quality of butter demanded for storage becomes the basis of the current quotations, and thus the standards for surplus butter in Chicago and New York tend to coincide during the season when a large portion of current market receipts are bought for storage purposes.

RELATION OF WHOLESALE PRICES TO JOBBING AND RETAIL PRICES.

Buyers who are expert judges of differences in the quality of butter will pay varying prices for different lots which they have personally inspected, but the market reporters who collect the information upon which the various wholesale price quotations are based do not have general access to the records of private business transactions between the first-hand market receivers and jobbers or retailers. This situation has naturally raised a question as to the complete reliability of market reports or price quotations as issued under present conditions. The open sales "on exchange," which serve as a convenient basis for determining current quotations, generally amount to less than 5 per cent of the daily market transactions; and they are therefore considered insufficient to serve as a fair index of prevailing market values.

To check the relationship of quality to wholesale and retail prices, it was originally planned to compare the quality of certain representative lots of butter from known shippers with the prices paid by receiver, jobber, retailer, and consumer. It was found practically impossible, however, to arrange such cooperation on the part of the wholesale dealers as would permit the obtaining of reliable data on both the quality of butter and the prices at which it was sold in normal business transactions. During one week when this was attempted practically every lot from the creameries cooperating in this investigation was reshipped immediately upon its arrival in Chicago to jobbers in distant cities. Furthermore, receivers were reluctant to give names of buyers and the terms of sale on some lots because they feared that to do so might jeopardize their trade relations with some desirable customers.

It was deemed necessary, therefore, to reverse the method of investigation by observing the goods sold to retailers under normal market conditions. By this method it was possible also to study the quality of butter in relation to prices at which it was sold by various representative retail dealers located in different parts of the city which catered

to various classes of trade. It was found impracticable, however, to trace any considerable number of lots from the retailer back to the creamery from which it had been shipped, because the creamery's stencil number usually is scraped off the tubs when they are weighed and inspected by the first-hand market receiver.

In Chicago, New York, Philadelphia, Minneapolis, and St. Paul an effort was made to check prices actually paid by various representative retailers with the current wholesale quotations for different grades of butter. To make the findings of these quality and price investigations comparable for the different cities, the buying and selling prices of all goods were compared with the New York wholesale quotations for Extras. No allowances were made for differences in freight rates from source of supply to these different cities; hence the average premiums paid in Chicago and the Twin Cities are considerably lower than those paid in New York and Philadelphia. In fact, for oleomargarine, process butter, and the lower grades of creamery butter the prevailing prices were below those of New York Extras.

A comparison of the prices at which different grades of creamery butter and their substitutes were sold in New York, Philadelphia, Chicago, St. Paul, and Minneapolis is shown in Table 3. The comparison is based on the New York quotations for Extras, and the prices are expressed in margins of differences between the highest New York quotations and the prices paid by retailers and consumers in the other cities listed. Whenever the price was less than the New York quotation, the difference is expressed as a minus quantity; that is, the figures show the prevailing discount instead of the premium at which such goods were sold.

It is noteworthy that jobbing and retailing prices in general vary in accordance with the grade of goods. Table 3 shows, however, that the differences in prices of different grades of goods are not the same in all markets. In New York 80 lots of Firsts were bought by retailers at prices which on the average were 1.2 cents below those paid for Extras. In Philadelphia and Chicago, however, the differences between average prices for Extras and Firsts were 1.7 cents and 0.8 cent, respectively. Specially advertised brands, with established reputations for exceptional quality, were sold at retail at premiums averaging from 9.1 cents in New York to 14.2 cents in Philadelphia. While there was a general tendency in all markets for prices to vary in accordance with the quality of butter sold, there were occasional exceptions, however, especially in the case of buyers who based their judgment of quality mainly upon known stencil numbers or trade-marks. For example, in Chicago the average retail price of 14 lots of Extras was lower than that of 159 lots of Firsts.

TABLE 3.—A comparison of prices at which different grades of butter and butter substitutes were sold in New York, Philadelphia, Chicago, St. Paul, and Minneapolis.

[Prices are expressed in margins of differences between highest New York quotations for Extras and the prices actually paid by retailers and consumers.]

Kind or grade.	New York.				Philadelphia.			
	Number of lots in-spected.	Average price paid above or below New York Extras.		Average margins of profit. ¹	Number of lots in-spected.	Average price paid above or below New York Extras.		Average margin of profit. ¹
		By retailer.	By consumer.			By retailer.	By consumer.	
		<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>		<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>
Extras.....	54	3.8	9.1	5.2	35	5.4	11.2	6.6
Firsts.....	80	2.6	6.6	4.3	35	3.7	8.8	6.1
Seconds.....	28	1.0	3.9	3.8	24	.4	2.3	5.0
Special brands.....	23	15.4	21.9	6.5	34	14.2	23.6	6.9
Unclassed.....	8	2.9	6.9	4.6	9	3.8	9.3	7.1
Totals ¹	193	3.6	8.0	4.7	137	7.2	11.9	6.0
Process.....	5	— 4.4	.5	4.7				
Oleomargarine.....	12	—12.6	— 6.7	5.8	4	—11.5	— 6.9	6.1
	Chicago.				Minneapolis and St. Paul.			
Extras.....	14	1.1	3.0	4.5	37	1.3	6.4	5.4
Firsts.....	159	.3	3.9	3.5	219	— .8	4.5	4.8
Seconds.....	107	— .5	1.9	3.3	70	— 3.2	1.6	4.5
Unclassed.....	24	— .3	3.3	3.4	39	— 1.7	4.4	5.4
Totals ¹	213	+ .05	3.0	3.9	365	— 1.14	4.12	4.86
Process.....	4	— 7.1			2	— 6.9	— 1.9	5.0
Oleomargarine.....	56	—12.8			26	—14.4	— 8.9	5.2

¹ Since both cost and selling prices were not obtained on some lots of butter the averages of prices and margins of profit do not always check.

Table 3 may not represent accurately the general differences in values of different grades of butter at all seasons of the year, because market demands and prices for different grades usually vary in accordance with changing conditions of the market supply. It is a noteworthy fact, however, as has been stated (p. 9), that the present published market quotations are not based on the sales records of a large number of representative lots of different grades of butter and that the open sales on exchange constitute a very small part of the total wholesale transactions, and that the prices applying to the bulk of the daily market transactions are based rather upon these published quotations.

RETAIL PRICE LEVELS.

DIFFERENCES BETWEEN CITIES DUE TO SPECIAL CONDITIONS.

A general correspondence of wholesale butter prices in the large distributing centers of the United States is shown in figure 2. Tables 1 and 2 show that the published wholesale quotations upon which the price curves in figure 2 are based may not present an accurate com-

parison of actual market values of exactly the same grades of butter; but either actual or potential competition between numerous creameries producing in excess of local market demands has tended to establish a fundamental level of prices between such market centers. The retail prices in some of the cities of the country, however, may sometimes be out of line with the basic prices of the larger butter-distributing centers: First, because definite and dependable market reports on creamery butter are not available for many cities in different parts of the country; and, second, because country creameries generally have no direct trade connections in such cities. Most country creameries can choose only between such large wholesale distributing centers as New York, Philadelphia, Chicago, and San Francisco. There are not many wholesale butter merchants in any other American cities who have won the patronage of a large number of creameries, and consequently there is little direct competition between different creameries for market outlets in a large number of different cities. This lack of direct competition between a large number of different creameries for various market outlets in various cities has enabled certain large centralizer creameries, which maintain their own distributing organizations in cities like Denver, Colo., Omaha, Nebr., Sioux City, Iowa, St. Paul and Duluth, Minn., Detroit, Mich., Milwaukee, Wis., and Columbus, Ohio, to sell at prices which temporarily may be higher than those received by some local country creameries.

Figure 3 compares the prevailing average retail prices of creamery butter in some of the larger cities of the United States. These prices are based on the reports of representative retail grocers which are made monthly to the Bureau of Labor Statistics,¹ United States Department of Labor. Although there are differences in prices reported by different retailers within the same city, the average yearly prices show that, on the whole, consumers generally pay higher prices for butter in some cities than in others.

The variations in the margins between the lines which show the retail prices in the various cities and the line which shows the basic Chicago wholesale quotation, represent roughly the differences in transportation costs from various sources of supply. The combined costs and profits of both the wholesale and retail distribution within a city, are indicated by the margin of difference between the wholesale price quotations of Chicago and the average of the prevailing retail prices in that city.

COMPETITION BETWEEN COUNTRY CREAMERIES AND CENTRALIZERS.

As a rule the wholesale prices of centralizer creameries are in line with the Chicago quotations, except for occasional increases

¹ Bulletin 84 of the U. S. Bureau of Labor Statistics, entitled "Retail Prices of Food, 1915-1916."

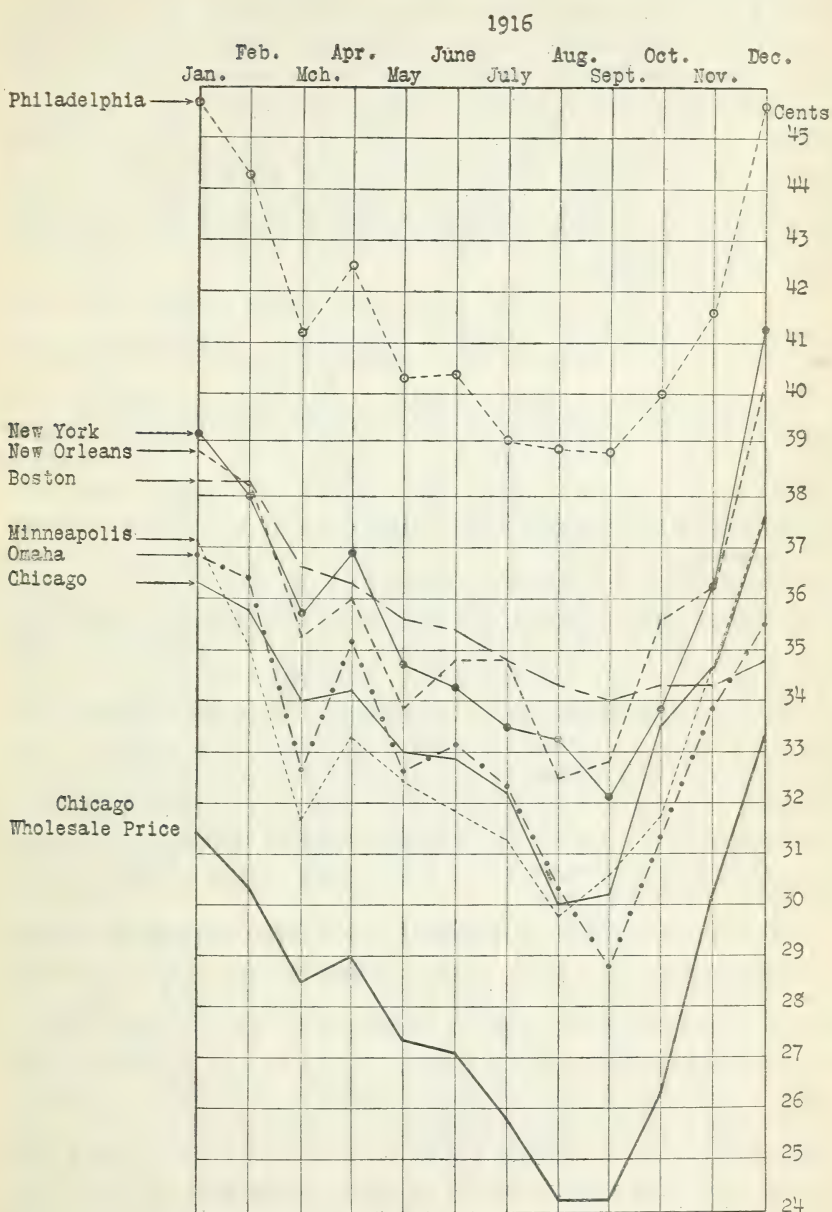


FIG. 3.—Comparison of average monthly retail prices of creamery butter in a number of cities with the Chicago basic wholesale quotation for extras.

when local competitive conditions permit. During the year 1914, when representatives of the department were investigating marketing conditions in the Middle West, it was found that the creameries in St. Paul, for example, were receiving at certain seasons higher prices than neighboring country creameries which shipped to Chicago. More than 375 lots of butter, which were scored in 103 representative retail stores, hotels, and restaurants in St. Paul and Minneapolis, showed that, for the best grade of country creamery butter in that market, certain retailers catering to a select class of trade were paying practically 2 cents per pound more than the usual price for the prevailing grades of both country creamery and centralizer butter in that market.

Only a small portion of the total requirements of those two cities, however, was supplied by country creameries. Retail grocers generally made no attempt to select their purchases on the basis of quality. Individual retailers usually restricted their dealings to a single centralizer creamery which supplied them regularly two or three times a week with freshly churned goods. Some of them stated that they believed that certain country creameries could supply them with a better grade of butter, but they had found that consumers generally preferred the attractive retail packages of well-advertised brands which were supplied by large centralizer creameries. Even though expert judges of butter were able to detect superiority in the quality of some of the country "make," retailers and consumers generally did not notice any decidedly "off flavors" in the brands furnished by the local centralizers. This was because they were in a position to deliver freshly churned stock three or four times a week. The difference in quality between some country creamery stock and the current supply of centralizer brands was slight at that season of the year. The average score of 120 lots of country creamery butter was 89.96, as compared with a score of 89.39 for 220 lots of centralizer brands.

Under such conditions it is difficult for country creameries to gain a dependable market outlet in cities where certain large creameries have developed a demand for their own make of goods. When outside creameries begin to make large shipments to such cities, prices are immediately forced down, because of the lack of established out-of-town trade connections. Unless creameries of the Middle Western States, where butter is constantly produced in excess of local demands, establish local concentrating points with facilities for grading and storing, and with widely ramifying trade connections in many sections of the country, their choice between dependable market outlets is practically limited to such wholesale markets as Chicago, New York, Boston, and Philadelphia.

EFFECT OF PACKAGING UNDER ESTABLISHED BRANDS.

As a result of the studies in the retail markets of larger cities in this country, it was found that most retailers, as well as consumers generally, do not buy butter on the basis of grades¹ as determined by official inspectors or expert judges of butter. Being usually unskilled judges of quality, they are guided largely by their experience with various stencil numbers or advertised brands or trade-marks. As a result of this practice, many creamery men whose butter is not sold under a distinctive trade-mark have come to believe that consumers pay for the brand and not the quality of goods. In Table 4 the average quality scores and retail prices of the different lots of bulk and trade-marked butter found in retail stores are compared.

TABLE 4.—*Comparison of quality (average score) and average retail price of branded and unbranded butter.*

[Retail prices expressed in margins between prices paid and local quotations for Extras.]

Market.	Branded lots.			Unbranded lots.		
	Number of lots.	Average score.	Price margin.	Number of lots.	Average score.	Price margin.
			<i>Cents.</i>			<i>Cents.</i>
New York.....	60	91.2	11.1	122	89.8	8.83
Philadelphia.....	80	90.8	11.6	21	90.7	9.02
Chicago.....	161	89.6	6.1	68	88.7	4.7
St. Paul and Minneapolis.....	230	89.3	5.18	37	89.7	5.06

It will be noted in this table that no definite relation appears to exist between quality and retail prices. Except for New York and Philadelphia, where many consumers are exceptionally discriminative or appreciative of good quality, there seems to be a tendency for consumers to pay more for trade-marked goods put in print packages than for unbranded "bulk" goods, regardless of any fine differences in quality. The average prices given in the table for "print" or trade-marked butter for New York and Philadelphia include a limited number of "special brands" made from either whole milk or cream of an exceptionally high quality. Such "special brands" are not marketed by the usual system of distribution employed by the majority of country creameries, but generally are sold "direct from factory to retailer" or through the manufacturer's own retail stores or delivery wagons. The prices obtained for butter sold under these brands, as shown by Table 3, ranged from 8 to 12 cents higher than those of Extras marketed through the usual system of distribution or local creamery butter.

¹ For a description of commercial practices in grading butter, see U. S. Department of Agriculture Bulletin 456, "Marketing Creamery Butter," by Potts, R. C., and Meyer, H. F.

Thus it is seen that while expert judges of quality will pay high prices for butter of exceptional quality and that while the local country creamery marketing system does differentiate between different grades of butter, the highest grades do not always retail at the highest prices. Many lots of country creamery butter, scoring equally as high as samples of "special brands," were retailed at prices 5 or 6 cents per pound lower.

EFFECT OF DIFFERENCES IN TYPE OF RETAILERS.

In Table 3 it is shown that some retailers made larger margins of profit by selling butter substitutes than they did by selling the ordinary grades of creamery butter. It is noteworthy, however, that as a general rule most retailers took a larger margin on the higher grades of butter than they did for Firsts or Seconds. Not all retailers aim to handle butter at a profit, for many grocers sold butter at unusually small margins in order to draw trade for other goods which presumably were being sold at fair margins of profit. Table 5 gives some comparisons in the volume of business, the kind of butter and butter substitutes handled, the comparative selling prices, and the margins at which butter was handled by different kinds of retail establishments.

MUNICIPAL MARKET STANDS.

The retail stands in public or central market places had the largest average weekly sales. These stands, like the dairy stores, generally sold only dairy products and eggs. Another distinguishing characteristic of this class of retail stores is that they make no deliveries of goods and all sales are for cash. In Philadelphia and New York this class of retailers supplied a considerable portion of the more discriminating class of consumers who exercise care in selecting their goods. The quality of a large portion of butter handled by this class of dealers was necessarily exceptionally high to meet the demands of their trade. (See Table 5, p. 18.)

DELICATESSEN STORES.

Under the class designated as delicatessen stores are included small family grocery stores which do not maintain a delivery service and whose average weekly sales are comparatively small. In the aggregate the percentage of the consumers in Chicago and New York who secure their butter supply as well as other staple groceries from this type of stores is large. Retailers of this class were found to be the poorest judges of quality in the goods they bought, and their average buying and selling prices were higher than those of dealers of any other class. In some cities many of these small retailers have sought to overcome this handicap through an arrangement whereby all pur-

chases are made by a single buyer who is an expert judge of butter. By centralizing their purchasing they also obtain the advantage of reduced prices on account of larger purchases. (See Table 5, p. 18.)

GROCERY STORES.

For the purpose of these comparative studies all stores which maintain regularly a telephone order department and a daily delivery service and which were not units of a chain store system were classified as "grocery stores." Another important characteristic of this class of stores is the fact that they usually carry many of their customers on monthly or biweekly credit accounts. In most cities the bulk of all retail sales of butter is made by stores of this type. It is noteworthy that the average selling price of independent grocery stores was higher than that of retail chain store systems. (See Table 5, p. 18.)

CHAIN STORES.

The greater portion of the butter supply of Philadelphia is sold through chain stores. These stores do not generally maintain a telephone service, and practically all sales are for cash. The distinctive characteristic of the chain-store system is the fact that the purchasing of all supplies is centralized; and thus "the system" has the advantage of having its supplies selected by expert judges of quality and reduced prices for large bulk purchases. The investigation showed that in Philadelphia this class of stores obtained Extras at an average of 2 cents below the prevailing prices paid by other classes of retailers. (See Table 5, p. 19.)

WAGON RETAILERS.

Retail hucksters or wagon peddlers who specialize in selling dairy products and eggs handle an extremely small percentage of the butter supply of any city. Special mention of this class of retailers is made because a few creameries have been able to obtain an exceptionally good price for a good grade of butter supplied in accordance with the regular demands of the customers served by them. Because of the comparatively small amount of their purchases, wagon retailers generally can not buy as cheaply as chain-store operators. (See Table 5, p. 19.)

DAIRY AND FRUIT STORES.

In New York and Boston a considerable number of small dairy stores are operated by fluid milk distributing concerns which also sell manufactured dairy products, eggs, honey, and other delicacies. In Chicago and other cities fruit stores also sell considerable quantities of butter. These two types of stores are classed together for the

purposes of this study because they sell approximately equal quantities of butter, and the terms of sales in each case are cash. Neither the fruit nor the dairy stores make deliveries. (See Table 5, p. 19.)

HOTELS, CLUBS, AND RESTAURANTS.

Clubs, hotels, and restaurants are not retailers of butter, but records of purchases of this class of "wholesale consumers" of butter were obtained for purposes of comparison with those of retailers. The quality of the butter purchased by New York and Philadelphia restaurateurs was comparatively much better than that purchased by those of Chicago, Minneapolis, and St. Paul. Some well-known hostelrys were able to buy at relatively low prices because of the advertising value of their patronage to the jobber. (See Table 5, p. 19.)

TABLE 5.—*Proportionate sales of butter and oleomargarine in relation to average cost prices and margins of gross profit of retailers and hotels, etc.*

15 REPRESENTATIVE MUNICIPAL MARKET STAND RETAILERS IN NEW YORK AND PHILADELPHIA.

Commodity sold.	Weekly sales. ¹	Per cent of total weekly sales.	Average cost price. ²	Retailers' gross profit.
	<i>Pounds.</i>	<i>Per cent.</i>	<i>Cents.</i>	<i>Cents.</i>
Common creamery butter sold in bulk.....	1,043	45	1.5	6.13
Common creamery butter sold in trade-marked cartons.....	742	32	4.2	7.96
Special quality brands sold in cartons.....	533	23	16.0	5.13
Total for all creamery butter.....	2,318	100	13.2	6.4
Process butter.....	0	0		
Oleomargarine.....	0	0		

110 REPRESENTATIVE DELICATESSEN STORES IN NEW YORK, PHILADELPHIA, CHICAGO, ST. PAUL, AND MINNEAPOLIS.

Common creamery butter sold from tubs.....	26.5	32	3.7	3.0
Common creamery butter sold in trade-marked cartons.....	45.6	55	6.0	4.7
Special quality brands sold in cartons.....	8.3	10	14.0	5.0
Total for all creamery butter.....	80.4	97	7.9	4.2
Process butter.....	.8	1	— 2.0	3.2
Oleomargarine.....	1.6	2	—13.7	7.5

165 REPRESENTATIVE GROCERY STORES IN NEW YORK, PHILADELPHIA, CHICAGO, ST. PAUL, AND MINNEAPOLIS.

Common creamery butter sold in bulk.....	126	33	2.2	3.6
Common creamery butter sold in trade-marked cartons.....	214	56	4.0	5.4
Special quality brands sold in cartons.....	8	2	20.0	6.9
Total for all creamery butter.....	348	91	8.7	5.3
Process butter.....	4	1	— 7.0	6.9
Oleomargarine.....	30	8	—10.5	4.9

¹ Average per retailer.

² Prices are expressed in margins of differences between cost prices of all grades of butter and oleomargarine and the highest New York quotations for Extras on the date of purchase. Proper allowance for transportation costs were made in cases of purchases in Chicago, St. Paul, and Minneapolis.

TABLE 5.—*Proportionate sales of butter and oleomargarine in relation to average cost prices and margins of gross profit of retailers and hotels, etc.*—Con.

36 CHAIN STORES IN NEW YORK, PHILADELPHIA, CHICAGO, ST. PAUL, AND MINNEAPOLIS.

Commodity sold.	Weekly sales. ¹	Per cent of total weekly sales.	Average cost price. ²	Retailers gross profit.
	<i>Pounds.</i>	<i>Per cent.</i>	<i>Cents.</i>	<i>Cents.</i>
Common creamery butter sold in bulk.....	494	54	0.7	3.0
Common creamery butter sold in trade-marked cartons.....	329	36	1.9	3.3
Special quality brands sold in cartons.....	0	0		
Total for all creamery butter.....	823	90	1.3	3.1
Process butter.....	9	1	— 6.0	4.0
Oleomargarine.....	82	9	—11.5	5.2

9 WAGON RETAILERS IN PHILADELPHIA, ST. PAUL, AND MINNEAPOLIS.

Common creamery butter sold in bulk.....	485	49	2.2	5.0
Common creamery butter sold in trade-marked cartons.....	346	35	5.5	6.0
Special quality brands sold in cartons.....	158	16	15.0	5.0
Total for all creamery butter.....	989	100	7.5	5.3
Process butter.....	0	0		
Oleomargarine.....	0	0		

30 DAIRY AND FRUIT STORES IN NEW YORK, PHILADELPHIA, CHICAGO, ST. PAUL AND MINNEAPOLIS.

Common creamery butter sold in bulk.....	826	61	2.3	4.5
Common creamery butter sold in trade-marked cartons.....	244	18	5.3	5.9
Special quality brands sold in cartons.....	26	2	13.2	8.3
Total for all creamery butter.....	1,096	81	6.9	6.2
Process butter.....	13	1	— 6.0	5.0
Oleomargarine.....	244	18	—14.0	4.9

35 HOTELS, CLUBS, AND RESTAURANTS IN CHICAGO, ST. PAUL, AND MINNEAPOLIS.

Kind of commodity purchased.	Purchased weekly. ⁴	Per cent of total purchases.	Average cost price. ³
	<i>Pounds.</i>	<i>Per cent.</i>	<i>Cents.</i>
Common creamery butter purchased in bulk.....	14.0	15	—1.5
Common creamery butter purchased in trade marked cartons.....	74.5	81	—0.8
Special quality brands purchased in cartons.....	0	0	
Process butter.....	3.6	4	—7.8
Oleomargarine.....	0	0	

¹ Average per retailer.² Prices are expressed in margins of differences between cost prices of all grades of butter and oleomargarine and the highest New York quotations for Extras on the date of purchase. Proper allowance for transportation costs were made in cases of purchases in Chicago, St. Paul, and Minneapolis.³ Average per restaurant.

SUMMARY OF RETAIL SALES RECORDS.

Table 5 shows that oleomargarine, process butter, and special brands of creamery butter in most cases constitute only a small portion of the total sales of all kinds of butter and butter substitutes. Different stores within the same class of retailers handle different

"makes" or "brands," but there seems to be a tendency among groceries and delicatessen stores to give preference to well-known and widely advertised brands. This is shown by the proportion of common creamery butter which is sold under advertised brands. The greatest portion of "special brand" butter was sold through high-class grocery stores, central-market stands, dairy stores, and wagon retailers. The largest sales of oleomargarine were made by certain retail fruit stores in Chicago.

From the records of retail grocery stores and wagon dealers, who sold largely "on credit" to over 20,000 families, it was possible to compare the weekly butter purchases of various classes of trade, including the poorest and the most well to do. The average weekly consumption per family for the different classes of trade was as follows: Poor class, 1.48 pounds; middle class, 1.97 pounds; well-to-do class, 1.60 pounds. The average weekly purchases of the middle-class customers of New York were somewhat larger than those of the other cities in which these studies were conducted. It is important to note that these figures were based on the current sales during the winter season, when butter prices are the highest of the year. There was evidence to show that during the season of decreased prices many families buy butter which do not use it in winter, and that many families which use butter the year around increase their average weekly purchases during the season of reduced prices.

The average prices of common creamery butter sold in retail stores that catered mainly to the poorer classes of laboring people were generally higher than the prices charged by stores whose customers consisted mainly of the better paid class of workingmen, clerks, and professional people. This may be explained, in part at least, by the fact that the stores serving the poorer classes of working people were mainly of the delicatessen or the small corner grocery type, which were usually unable to buy as cheaply as those retailers who purchased their supplies in comparatively large quantities.

CONCLUSIONS.

There are considerable differences in the prices of creamery butter in different cities of the United States, but the wholesale prices in all cities follow rather closely the current wholesale prices at which the surplus production of the creameries of the Middle West is sold on the larger wholesale markets. Differences in distance from the sources of supply to the various markets, and hence in transportation costs, account for most of the wholesale price variations between different cities. There are variations in prices paid by different merchants in various cities, however, which find their explanation in the differences in consumers' tastes and buying powers.

An important function of an efficient butter marketing system is to effect such a distribution of the various grades of butter produced in various parts of the country that the product of each factory may be sold in the particular city or section of a city where it will bring the highest return to the producer. Improvement in sources of market information would facilitate such an equitable distribution of the output of more than 4,000 creameries which are individually too small to maintain their own sales organizations in distant markets. Under the prevailing system of marketing country creamery butter, however, market returns to creamerymen are based upon market quotations issued by market reporting agencies, and a method of grading which is controlled by the wholesale butter merchants themselves. A system of butter inspection and grading operated under the supervision of the Federal Government,¹ available to shippers of creamery butter and wholesale and retail distributors, would tend to facilitate the market distribution of creamery butter on an equitable quality basis. A market-reporting service on creamery butter was recently established by the Bureau of Markets of the United States Department of Agriculture; and many creameries and wholesale market receivers are relying upon the daily market reports issued as a basis for guiding their marketing operations. The price reports² issued by the Bureau of Markets are based upon actual sales of various lots of butter of different grades of quality, and an average price is quoted for each score rather than a range of prices covering the scores included within the different market grades. (See Table 1.)

These studies of quality and prices of creamery butter show that the highest retail prices are paid for creamery butter which is sold under a trade-mark or brand that is generally recognized among consumers as a guaranty of uniform excellence of quality. Generally, however, only those creameries which are located in large cities or whose outputs are sufficient to enable them to establish their own marketing organizations in distant centers of population have been able to arrange to have their butter sold under their own distinctive brands or trade-marks. The unusually high prices obtained for certain "special brands" of butter sold in Philadelphia and New York suggest the possibility of increasing greatly the market returns of

¹Authority for establishing such an inspection service was provided for in H. R. 4188, Sixty-fifth Congress, approved Aug. 10, 1917.

²The Bureau of Markets' price reporting service on creamery butter was authorized by Congress in H. R. 4188, Sixty-fifth Congress, which provided for "enlarging the markets news service" of the Bureau of Markets as a war-emergency measure. Branch offices have been established in the four important wholesale butter markets—Boston, New York, Philadelphia, and Chicago—and through these offices and others to be established, daily butter-market bulletins showing both wholesale and jobbing prices of creamery butter in these markets, the cold-storage movement, and supplies of fresh butter on the market are issued. These bulletins are distributed free to all who make requests for them.

creameries making "States Brand Butter," provided such butter is sold to the consumers under the exclusive brands of the creameries.

Retailers and consumers might also, with advantage to themselves, improve their buying methods. Small grocers and proprietors of delicatessen shops often pay higher prices for butter of comparatively inferior quality than larger dealers pay for butter of choice quality. Cooperative buying associations among the retailers of some cities in which an expert judge of butter quality does the buying have overcome some of the difficulties encountered by retailers who buy as individuals in competition with the larger retailing organizations.

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